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Preface

The rule-based programming paradigm is characterised by the repeated, localised transformation of a data object such as a string, term, graph, proof, constraint store, etc. The transformations are described by rules which separate the description of the object to be replaced (the pattern) from the construction of the replacement. Optionally, rules can have further conditions that restrict their applicability. The transformations are controlled by explicit or implicit strategies.

The basic concepts of rule-based programming appear throughout computer science, from theoretical foundations to practical implementations: term rewriting is used to specify the semantics of programming languages, graph rewriting is a popular programming language implementation technique, and rules are used implicitly or explicitly to perform computations, e.g., in Mathematica, OBJ, ELAN, Maude, or to perform deductions, e.g., by using inference rules to describe or implement a logic, theorem prover or constraint solver. Mail clients and mail servers use complex rules to help users organise their email and filter out spam. Language implementations use bottom-up rewrite systems for code generation, and constraint-handling rules (CHRs) are used to specify and implement constraint-based algorithms and applications. Rule-based programming idioms also give rise to programming languages and systems such as Claire, Elan, Maude and Stratego.

This volume contains the papers presented at the 7th International Workshop on Rule Based Programming, RULE 2006, which was held in Seattle on the 11 August 2006, as part of the Federated Logic Conference (FLoC). Previous editions of this workshop were held at Nara (2005), Aachen (2004), Valencia (2003), Pittsburg (2002), Florence (2001) and Montreal (2000).

The Programme Committee selected seven papers to be presented at RULE 2006, which can be found in these proceedings. In addition the programme of RULE 2006 included two invited talks (joint with the International Workshop on Rewriting Strategies), by Claude Kirchner and Dick Kieburtz.

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